

REMARKS

Upon entry of this amendment claims 1-13 are pending. Applicants note that claim 12 was neither examined nor restricted. Although applicants filed a preliminary amendment on June 18, 2001, amending claims 1-11, claim 12 was never canceled from the application nor were amended claims 1-11 of the preliminary amendment represented as a complete listing of the claims. Therefore, claim 12 of the present application has been present since the August 21, 2001 filing date of this application and examination of this claim is respectfully requested. New claim 13 is based on the recitations of original claim 3.

Drawings

Applicants wish to thank the Examiner for the acknowledgement of the Informal Drawing filed with the original application and attach hereto a copy of the Formal Drawing.

Claim Rejections Under 35 USC 103

Claims 1-9 and 11 are rejected under 35 USC 103(a) as being unpatentable over either US 5,123,595 (Doss) or DE 3323710 (Fischer) in view of US 5,346,426 (Kronfält). Applicants traverse this rejection for the following reasons.

The invention relates to a sheath of flexible material for close protection of products placed on a work surface and sensitive to airborne contamination, the protection being provided by diffusing a stream of sterile air, in particular in a direction that is substantially perpendicular to said work surface, said sheath defining a sterile air feed duct and presenting a geometrical singularity.

In conventional manner, a sheath of this type is made by a leakproof wall and a porous wall of perforated flexible material, such as a textile fabric, extending longitudinally along the axis of the sheath. In a sheath of this type, immediately downstream from a singularity in the sterile air flow direction in the sterile air feed duct defined by the sheath, it can happen that the speed profile of the sterile air stream is found to be deformed. (The term "singularity" is used herein to mean a bend, a branch connection, or a change of section in the sheath, for example.)

Thus, sterile air speeds in the flowing stream become locally too great, thereby

generating dynamic air pressure at this location in the sheath, which is greater than the total pressure in said sheath. As a result, the static pressure of the air at this location in the sheath becomes negative and acts as suction on the inside face of the porous wall of flexible material of said sheath.

If the flexible material constituting the porous wall of the protective sheath is not very porous, then the zone of suction created in this way inside the sheath immediately after the singularity can cause external air to be sucked into the sheath, thereby contaminating the sterile air diffused by said sheath.

If the flexible material constituting the porous wall of the protective sheath is very porous, then it is sucked towards the inside of the sheath at the location where the suction zone is created in this way and a phenomenon of fluttering or flapping is observed in the porous wall of the sheath at this location. This phenomenon then disturbs the speed profile of the sterile air leaving the sheath and it is no longer ensured that the flow of protective sterile air is uniform.

In order to mitigate the above-mentioned drawbacks, the present invention proposes a novel and nonobvious sheath of flexible material for providing protection by diffusing sterile air, the sheath including an internal arrangement enabling the speed profile of the sterile air at the outlet from a singularity of said sheath to be recentered in such a manner as to maintain the static pressure at said location at a level which is high enough to prevent a suction zone being created.

More particularly, according to the invention, a sterile air diffusion cone is provided in said feed duct immediately after said singularity in the direction of sterile air flow in said duct, the diffusion cone being oriented in the sterile air flow direction and being centered on the longitudinal axis X of the sheath.

The present invention provides a solution to this problem by avoiding deformation of the speed profile, that is, the problem of distributing sterile air uniformly inside the sheath at the outlet from the singularity.

No combination of the cited references addresses this problem or teaches or suggests a solution. Kronfält relates low impulse devices that when heating needs arise, are able to switch to heating of a ventilated room by means of warm supply air while at the same time

maintaining a low concentration of impurities at the occupied zone (the level most proximal the floor) (col 1, l. 57-64). The problem solved by the invention relates to cases where there is a work surface to be protected. No work surface is disclosed in Kronfält. This document does not pertain to the field of the invention.

Moreover the present invention relates to sheath having a singularity inside the sheath. No such sheath is disclosed in Kronfält, Fischer or Doss. Therefore, none of the teachings of Kronfält, Fischer or Doss, suggest or teach the device of claim 1. Therefore, the rejection for obviousness is improper and should be withdrawn.

Rejections Under 35 USC 112, 2nd P – Indefiniteness

The claims have been amended to overcome the rejection for indefiniteness by deleting the phrase “in particular” from claim 1, “preferably” from claim 3 and “slightly” from claim 8. Therefore, withdrawal of this rejection is respectfully requested.

Conclusion

Applicants urge that the present application is in condition for allowance and solicit a notice to this effect. The Examiner is encouraged to contact the undersigned representative with any questions.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741.

Respectfully submitted,

Date December 9, 2004

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Atty. Dkt. No. 065691-0227

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Didier BEUDON et al.
Title: DEVICE FOR DIFFUSING STERILE AIR IN
A FABRIC SHEATH
Appl. No.: 09/868,315 ✓
Filing Date: 08/29/2001
Examiner: Harold Joyce
Art Unit: 3749

TRANSMITTAL OF FORMAL DRAWING

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

ATTENTION: DRAWING REVIEW BRANCH

Sir:

Transmitted herewith are the formal drawings (1 sheet, Figures 1-3) for the above-identified application. The Official Draftsperson is respectfully requested to approve these drawings for entry into the application.

Respectfully submitted,

Date December 9, 2004

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